Activity for ages 5 - 7 Weightlifting | This activity practises adding two numbers to find a total



What you will need

- 1 copy of the playing board, which could be enlarged to A3. Cut around the weightlifter and pans and use split pins to create balance scales.
- Numicon pan balance for children to check their working if needed
- Plenty of Numicon Shapes
- Dice or Numicon spinner and a spinner overlay

What to do

- 1. Explain that weightlifting should only be done with the same weight being lifted by each hand.
- 2. Spin the Spinner or roll the dice to get the total that needs to be in each pan and then decide which different pairs of Shapes to put on each side of the pan balance on their playing board to make sure it is equal.

For example, if 8 is spun, or rolled, a 6-Shape and a 2-Shape can be placed in one side of the pan balance, and two 4-Shapes placed on the other side.

- 3. Find all the pairs of Shapes that can be put together to make your total.
- 4. Allow time for your child to explore finding equivalent number bonds for several different numbers.

Challenge

- Challenge your child to use two of the same Numicon Shapes to try to make the scales balance for each number between 10 and 20.
- Ask your child to record their results e.g. Fig. 1.
- Discuss which numbers your child could not find a balancing number bond for (odd numbers).

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• Discuss what your child noticed about the results (all doubles).

Number	Numicon Shapes	
10	5 + 5	
11		
12	6+6	



Numicon Summer Challenge Activity playing board Weightlifting | Playing board 1





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Activity for ages 6 - 8 Archery | This activity practises adding together two or more numbers



What you will need

- 1 copy of one of the three playing boards
- Plenty of Numicon Shapes of the following types: Playing Board 1: 1-3 shapes; Playing board 2: 1-5 shapes; Playing board 3: 1-10 shapes
- 1 Numicon Feely Bag
- Small coloured counters

What to do

- Talk about how archers aim to get their arrows as near to the middle of the target as possible. The nearer the middle, the higher their score. Explain that your child is going to try to get a really high score. To get their 'score', they will pick up a handful of Shapes and calculate the total. If the total is not on the board they try again Alternatively, they round up or down and place their counter on the relevant ring of the Archery playing board.
- 2. Put the Shapes into the Feely Bag. (as advised above, chose the shapes that match the game board you are using).
- 3. If using Playing Board 1, remove two Shapes. If using Playing Board 2, remove three Shapes and if using Playing Board 3, remove a handful of Shapes.
- 4. Find the total from the Shapes collected.
- 5. Place a counter on the relevant ring of the Archery playing board to indicate your total.
- 6. When you have used five arrows, i.e. taken shapes five times, calculate your total.
- 7. How could you ensure your score is as high as possible? What if you could decide in advance which shapes to put in the Feely Bag?

Challenge

• Play with a partner. Both players take a handful of Shapes. Use a stopwatch and stop it as soon as a total is calculated. The player with the quickest time wins. If the game is played in this way, how would you change your strategy?

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- Start with a total, and subtract your 'arrow scores' (the Shapes that you take out of the Feely Bag). How many 'arrows' do you need to shoot to get to zero?
- Based on the Shapes placed in the Feely Bag and the total selected, what's the smallest amount of 'arrows' you could use to get to zero? Can you record all the different combinations of Numicon Shapes you could use to reach zero with the smallest amount of arrows?

Numicon Summer Challenge Activity playing board Archery | Playing Board 1





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Numicon Summer Challenge Activity playing board Archery | Playing board 2





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Numicon Summer Challenge Activity playing board Archery | Playing board 3





Activity for ages 7 - 9 **Rowing** | This activity practises multiplying



What you will need

- 1 copy of the playing board
- Number rods
- Numicon 2-, 3- and 5-Shapes
- A Numicon Feely Bag
- Paper and pencils.

What to do

- 1. Talk about teams rowing together. Teams can have 2, 4 or 8 rowers.
- 2. Use a 10-rod to be an oar.
- 3. How many 10-rods will you need for a team of 8? (Place the rods on the rowing boat playing board to help visualise this problem.)
- 4. Agree how many rowers in your rowing boat.
- 5. Put several 2-, 3- and 5-shapes in the Feely Bag. Take out a Shape. This Shape decides the length of oar in metres the rowing team has. Calculate the total length of oars for your team. Repeat with different sized teams and different Numicon Shapes.

Challenge

• If the 10-rod represents 1 metre, and the oars are 2 metres long, how many 10-rods will you need for a team of 8?

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- What about if each oar is 3 metres long?
- Explore the number rods needed for different sized teams with different lengths of oar.
- If the 10-rod represents 1 metre, how could you calculate the number of rods needed if a team of 8 has oars that are 21/2 metres long?



Activity for ages 7 - 9 Hurdles | This activity practises multiplying





What you will need

- 1 A4 copy of the playing board per team. To make the playing board, cut around the track and stick the three sections together.
- Number rods
- Pencils.

What to do

- 1. Using the running track playing board, explain that your child is going to work out how to space hurdles evenly along the running track using number rods.
- 2. Explain that between every 10-rod there will be one hurdle. Ask your child to place 10-rods end-to-end along their track. Ask how many hurdles will fit on the track. Your child can use a pencil to mark where each hurdle will be.
- 3. If the 10-rod represents 10 metres, how far has the hurdler got to go from the start line to the finish line? What about to the last hurdle?

Extensions and questions

- What happens if you put in twice as many hurdles over the same distance? Which number rods would you use now?
- What if there needs to be 15 metres between the hurdles but the number of hurdles stays the same? What is the total distance now?
- Assume the 1-rod represents 1 metre. How many hurdles can be fitted if the distance between each is 3 metres (i.e. a 3-rod)?
- What happens to the number of hurdles if the track is twice as long?

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